

## **REMARKS**

This is a full and timely response to the outstanding Action mailed August 8, 2006. Upon entry of the amendments in this response, claims 1, 4-6, and 10-20 remain pending in this application. In this response, Applicant has amended claims 4-6 and 10-14 and has added new claims 15-20 without waiver, disclaimer, or prejudice to the subject matter previously claimed. Claim 11 further recites the limitation of “a pixel electrode disposed on a part of the drain and electrically connected to the drain through a via”. Additionally, claims 15, 17, and 19 recite the limitation of “the pixel electrode is substantially located (or disposed) between the gate and the compensation structure and substantially spaced apart from at least one of the gate and the compensation structure”. Support for these amendments can be found at various portions of the application. By way of example, Figs. 3A and 3B show the side 124 of drain D partially overlapping the pixel electrode 114, which is electrically connected to the drain D through a via. Moreover, Figs. 3A, 3B, 6, and 7 show the pixel electrode 114 is disposed between the gate G and the compensation structure(s) 102a/102b. Accordingly, no new matter has been added to the application by these amendments. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

### **Rejections under 35 U.S.C. 102**

The Office Action indicates that claims 11-14 stand rejected under 35 U.S.C 102(b) as allegedly anticipated by Ukita (US Pat. 6,310,668). Applicant respectfully traverses the rejections.

With respect to Ukita, Ukita discloses several embodiments (mainly indicated as prior art) relevant to a LCD device with compensation structure. In one embodiment, the device includes a gate electrode 32 and a compensating gate electrode 61, which

are so arranged as to extend in a direction perpendicular to a longitudinal direction of a gate bus wiring 33. A compensating source electrode 62 is disposed over both the source electrode 40 and the compensating gate electrode 61 in a partially overlapping relationship therewith. Additionally, the protruded portion of the pixel electrode 42 has a left side and a right side. The left side of the protruded portion of the pixel electrode 42 overlaps the gate electrode 32 and the right side overlaps the compensating gate electrode 61 (See col. 4, lines 31-37, and Fig. 11). The Office Action alleges that the protruded portion of the pixel electrode 42 can function as a drain electrode recited in claims 1, 5, and 11 of the present application. Applicant respectfully disagrees.

In this regard, Applicant notes that FIG. 11 of Ukita does not show a compensating source electrode 62 is disposed over both the source electrode 40 and the compensating gate electrode 61 as mentioned, but shows a pixel electrode 42 overlaps the gate 32 through a source portion 40 and overlaps the compensating gate electrode 61 through a compensating source portion 62. In other words, the pixel electrode disclosed by Ukita not only can function as a source/drain, as asserted by the Office Action, but also includes a source/drain. This requires (as will be understood by a person skilled in the art) that the pixel electrode and the source/drain disclosed by Ukita should be formed by the same layer, rather than different layers.

Turning now to amended claim 11, that claim recites:

11. A liquid crystal display device with a capacitance-compensated structure, comprising:  
a first process layer comprising a gate line, a gate, and a compensation structure, wherein the gate is electrically connected to the gate line and the compensation structure connects to the gate; and  
**a second process layer comprising a data line, a source, and a drain, wherein the source and the drain are formed**

***corresponding to both sides of the gate, respectively, the source is electrically connected to the data line, the data line is substantially perpendicular to the gate line, the drain has a first side overlapping the gate and a second side overlapping the compensation structure; and***

***a pixel electrode disposed on a part of the drain and electrically connected to the drain through a via.***

wherein there is an acceptable alignment shift range between the first process layer and the second process layer, the sum of the capacitance of a first parasitic capacitor between the first side of the drain and the gate and a second parasitic capacitor between the second side of the drain and the compensation structure maintain a substantially constant value within the acceptable alignment shift range.

(Emphasis Added). Claim 11 patently defines over the cited art for at least the reason that the cited art fails to disclose the features emphasized above.

As set forth above, Applicant respectfully asserts that Ulita does not teach or reasonably suggest at least the features/limitations that have been emphasized above in independent claim 11. For example, Ukita does not teach or suggest that a pixel electrode is disposed on a part of the drain having a first side overlapping the gate and an opposing second side overlapping the compensation structure, and is electrically connected to the drain through a via. Moreover, the pixel electrode disclosed by Ukita is formed by the same layer as the drain, rather than different layers. Accordingly, Applicant respectfully asserts that the rejection of claim 11 is deficient and that claim 11 is in condition for allowance. Further, since dependent claims 12-14 incorporate the limitations of claim 11, Applicant respectfully assert that these claims also are in condition for allowance.

### **Rejections under 35 U.S.C. 103**

The Office Action indicates that claims 1, 4-5, and 10 stand rejected under 35 U.S.C 103(a) as allegedly unpatentable over Ukita (US Pat. 6,310,668) in view of Moon (US Pat. 7,075,595) and claim 6 stands rejected under 35 U.S.C 103(a) as allegedly unpatentable over Ukita and Moon in view of Fujikawa (US Pat. 5,995,178). Applicant respectfully traverses the rejections.

The Office Action indicates Ukita does not explicitly disclose that a pixel electrode disposed on a part of the drain and electrically connected to the drain through a via, but Moon teaches that a pixel electrode 225 disposed on a part of the drain 117 and electrically connected to the drain 117 through a via (the drain contact hole 221). Moreover, because the pixel electrode 225 and the drain electrode 117 are formed in different layer through an insulating layer (such as 118), so that the connection must be through a via (such as a contact hole 221). Applicant respectfully disagrees. As set forth, the pixel electrode disclosed by Ukita can function as a source/drain and the pixel electrode and the drain electrode disclosed by Ukita are formed by the same layer. In this regard, since the pixel electrode disclosed by Ukita can function as a source/drain, there is no reason to form an additional source/drain electrode under the pixel electrode, in which the additional source/drain electrode is electrically connected to the pixel electrode through a via. Additionally, if the source/drain electrode can function as a pixel electrode, there is no reason to form an additionally pixel electrode over the source/drain electrode, electrically connected to the source/drain electrode through a via. Therefore, Applicant respectfully submits that there is no proper motivation or

reason to combine Ukita with Moon (based on the scope and content of the prior art, and the nature of the problem to be solved).

Turning now to claims 1 and 5, claim 1 recites:

1. A liquid crystal display device with a capacitance-compensated structure, comprising:
  - a gate line;
  - a gate electrically connected to the gate line;
  - a compensation structure extending from at least one of the gate and the gate line;
  - a drain having a first side and a second side, wherein the first side of the drain overlaps the gate and the second side of the drain overlaps the compensation structure; and**
  - a pixel electrode disposed on a part of the drain and electrically connected to the drain through a via.**

(*Emphasis Added*). Claim 1 patently defines over the cited art for at least the reason that the cited art fails to disclose the features emphasized above.

Likewise, claim 5 recites:

5. A liquid crystal display device with a capacitance-compensated structure, having a gate line and a data line to turn a thin film transistor on or off, comprising:
  - a gate electrically connected to the gate line;
  - a drain having a first side and a second side, wherein a first parasitic capacitor is formed between the first side of the drain and the gate and a second parasitic capacitor is formed between the second side of the drain and the gate, wherein the second parasitic capacitor comprises the second side of the drain and a compensation structure extending from the gate or the gate line; and**
  - a pixel electrode disposed on a part of the drain and electrically connected to the drain through a via.**

(*Emphasis Added*). Claim 5 patently defines over the cited art for at least the reason that the cited art fails to disclose the features emphasized above.

According to MPEP 2143, to establish a prima facie case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the

knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.

Further, and based on the controlling precedent of Graham v. John Deere Co., 383 U.S. 1, 14, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966), as set forth above, fully considering the scope and content of the prior art, and the nature of the problem to be solved (which is solved by the present invention), it would not be obvious for one skilled in the art to combine Ukita with Moon. Accordingly, Applicant respectfully asserts that the rejection of claims 1 and 5 is deficient and that these claims are in condition for allowance. Further, since dependent claim 4 incorporates the limitations of claim 1 and dependent claims 6 and 10 incorporate the limitations of claim 5, Applicant respectfully assert that these claims also are in condition for allowance.

### **Newly Added Claims**

Upon entry of the amendments in this response, Applicant has added claims 15-20 and respectfully asserts that these claims are in condition for allowance, since claims 15-20 are dependent claims that incorporate the limitations of claims 1, 5 and 11. Moreover, Applicant respectfully asserts that the cited references, either individually or in combination, are legally deficient for the purpose of rendering claims 15-20 unpatentable. Specifically, Applicant respectfully asserts that none of the references teaches or reasonably suggests the pixel electrode is substantially located (or disposed) between the gate and the compensation structure (or capacitance-compensation structure) and substantially spaced apart from at least one of the gate and the compensation structure (or capacitance-compensation structure), as recited in claims

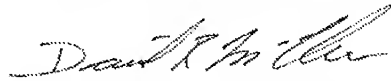
15, 17 and 19, respectively. Therefore, Applicant respectfully asserts that claims 15, 17 and 19 are in condition for allowance.

No fee is believed to be due in connection with this submission. If, however, any additional fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 20-0778.

Respectfully Submitted,

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& RISLEY, L.L.P.**

By:



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